



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2023-0010; Project Identifier MCAI-2022-01090-T]

RIN 2120-AA64

Airworthiness Directives; Bombardier, Inc., Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for certain Bombardier, Inc., Model CL-600-2B16 (604 Variant) airplanes. This proposed AD was prompted by a determination that during certain modes, the flight guidance/autopilot does not account for engine failure while capturing an altitude. This proposed AD would require revising the existing airplane flight manual (AFM) to add new limitation and procedures. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to [regulations.gov](https://www.regulations.gov). Follow the instructions for submitting comments.

- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

AD Docket: You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-0010; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The street address for Docket Operations is listed above.

Material Incorporated by Reference:

- For Bombardier service information identified in this NPRM, contact Bombardier Business Aircraft Customer Response Center, 400 Côte-Vertu Road West, Dorval, Québec H4S 1Y9, Canada; telephone 514-855-2999; email ac.yul@aero.bombardier.com; website [bombardier.com](https://www.bombardier.com).

- You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

FOR FURTHER INFORMATION CONTACT: Chirayu Gupta, Aerospace Engineer, Mechanical Systems and Administrative Services Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300; email 9-avs-nyaco-cos@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2023-0010; Project Identifier MCAI-2022-01090-T” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data.

The FAA will consider all comments received by the closing date and may amend the proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to [regulations.gov](https://www.regulations.gov), including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Chirayu Gupta, Aerospace Engineer, Mechanical Systems and Administrative Services Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300; email 9-avs-nyaco-cos@faa.gov. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

Transport Canada, which is the aviation authority for Canada, has issued Transport Canada AD CF-2022-45, dated August 11, 2022 (Transport Canada AD CF-2022-45) (also referred to after this as the MCAI), to correct an unsafe condition on

certain Model CL-600-2B16 (604 Variant) airplanes. The MCAI states that during (V) ALTS CAP or (V) ALTV CAP modes, the flight guidance/autopilot does not account for engine failure while capturing an altitude. If an engine failure occurs during or before a climb while in one of these modes, the airspeed may decrease rapidly below the safe operating speed, and prompt crew intervention may be required to maintain a safe operating speed. Transport Canada AD CF-2022-45 requires updating the Limitation and Abnormal Procedures of the AFM for (V) ALTS CAP or (V) ALTV CAP modes to address the unsafe condition for the affected Model CL-600-2B16 (604 Variant) airplanes. These updates include:

- A warning regarding the potential airspeed decay in the case of an engine failure during a climb while in (V) ALTS CAP or (V) ALTV CAP modes.
- A new procedure to adjust the pitch attitude to maintain the required operating airspeed in the case of an engine failure during a climb while in (V) ALTS CAP or (V) ALTV CAP modes.

The unsafe condition, if not addressed, could result in the airplane failing to maintain a safe operating speed.

You may examine the MCAI in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-0010.

Related Service Information under 1 CFR Part 51

The FAA reviewed the following service information, which specifies revised Limitations and Abnormal Procedures of the AFM for (V) ALTS CAP or (V) ALTV CAP modes. These documents are distinct since they apply to different airplane models and configurations.

- Sub-section 2. “Automatic Flight Control System,” of section 02-08, Systems Limitations, of Chapter 2 – LIMITATIONS of Bombardier Challenger 604 Airplane Flight Manual – Publication No. PSP 604-1, Revision 120, dated December 8, 2020. (For

obtaining this section of the Bombardier Challenger 604 Airplane Flight Manual – Publication No. PSP 604-1, use Document Identification No. CH 604 AFM.)

- Sub-sub-section B., “Engine Failure in Climb During (V) ALTS CAP or (V) ALTV CAP,” of sub-section 1. “Single Engine Procedures” of section 05-03, “Single Engine Procedures,” of Chapter 5 – ABNORMAL PROCEDURES; of Bombardier Challenger 604 Airplane Flight Manual – Publication No. PSP 604-1, Revision 120, dated December 8, 2020. (For obtaining this section of the Bombardier Challenger 604 Airplane Flight Manual – Publication No. PSP 604-1, use Document Identification No. CH 604 AFM.)

- Sub-section 2. “Automatic Flight Control System,” of section 02-08, Systems Limitations, of Chapter 2 – LIMITATIONS of Bombardier Challenger 605 Airplane Flight Manual – Publication No. PSP 605-1, Revision 58, dated December 8, 2020. (For obtaining this section of the Bombardier Challenger 605 Airplane Flight Manual – Publication No. PSP 605-1, use Document Identification No. CH 605 AFM.)

- Sub-sub-section B., “Engine Failure in Climb During (V) ALTS CAP or (V) ALTV CAP,” of sub-section 1. “Single Engine Procedures” of section 05-03, “Single Engine Procedures,” of Chapter 5 – ABNORMAL PROCEDURES of Bombardier Challenger 605 Airplane Flight Manual – Publication No. PSP 605-1, Revision 58, dated December 8, 2020. (For obtaining this section of the Bombardier Challenger 605 Airplane Flight Manual – Publication No. PSP 605-1, use Document Identification No. CH 605 AFM.)

- Sub-section 2. “Automatic Flight Control System,” of section 02-08, Systems Limitations, of Chapter 2 – LIMITATIONS of Bombardier Challenger 650 Airplane Flight Manual – Publication No. PSP 650-1, Revision 23, dated December 8, 2020. (For obtaining this section of the Bombardier Challenger 650 Airplane Flight Manual – Publication No. PSP 650-1, use Document Identification No. CH 650 AFM.)

- Sub-sub-section B., “Engine Failure in Climb During (V) ALTS CAP or (V) ALTV CAP,” of sub-section 1. “Single Engine Procedures” of section 05-03, “Single Engine Procedures,” of Chapter 5 – ABNORMAL PROCEDURES; of Bombardier Challenger 650 Airplane Flight Manual – Publication No. PSP 650-1, Revision 23, dated December 8, 2020. (For obtaining this section of the Bombardier Challenger 650 Airplane Flight Manual – Publication No. PSP 650-1, use Document Identification No. CH 650 AFM.)

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

FAA’s Determination

This product has been approved by the aviation authority of another country, and is approved for operation in the United States. Pursuant to the FAA’s bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI and service information described above. The FAA is issuing this NPRM after determining that the unsafe condition described previously is likely to exist or develop on other products of the same type design.

Proposed AD Requirements in this NPRM

This proposed AD would require accomplishing the actions specified in the service information already described.

Transport Canada AD CF-2022-45 requires operators to “advise all flight crews” of revisions to the AFM, and thereafter to “operate the affected aircraft accordingly.” However, this proposed AD would not specifically require those actions as those actions are already required by FAA regulations. FAA regulations require operators furnish to pilots any changes to the AFM (for example, 14 CFR 121.137), and to ensure the pilots are familiar with the AFM (for example, 14 CFR 91.505). As with any other flightcrew

training requirement, training on the updated AFM content is tracked by the operators and recorded in each pilot's training record, which is available for the FAA to review. FAA regulations also require pilots to follow the procedures in the existing AFM including all updates. 14 CFR 91.9 requires that any person operating a civil aircraft must comply with the operating limitations specified in the AFM. Therefore, including a requirement in this proposed AD to operate the airplane according to the revised AFM would be redundant and unnecessary.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 409 airplanes of U.S. registry. The FAA estimates the following costs to comply with this proposed AD:

Estimated costs for required actions

Labor cost	Parts cost	Cost per product	Cost on U.S. operators
1 work-hour X \$85 per hour = \$85	\$0	\$85	\$34,765

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority

because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Would not affect intrastate aviation in Alaska, and
- (3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive:

Bombardier, Inc.: Docket No. FAA-2023-0010; Project Identifier

MCAI-2022-01090-T.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Bombardier, Inc., Model CL-600-2B16 (604 Variant) airplanes, certificated in any category, serial numbers (S/N) 5301 through 5665 inclusive, 5701 through 5988 inclusive, and 6050 through 6160 inclusive.

(d) Subject

Air Transport Association (ATA) of America Code 22, Auto flight.

(e) Unsafe Condition

This AD was prompted by a determination that during (V) ALTS CAP or (V) ALTV CAP modes, the flight guidance/autopilot does not account for engine failure while capturing an altitude. The FAA is issuing this AD to address the possible occurrence of an engine failure during or before a climb while in (V) ALTS CAP or (V) ALTV CAP modes, which could cause the airspeed to decrease rapidly. The unsafe condition, if not addressed, could result in the airplane failing to maintain a safe operating speed.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Revision of Existing AFM

Within 30 days after the effective date of this AD: Do the applicable actions specified in paragraph (g)(1) through (3) of this AD.

(1) For Model CL-600-2B16 (604 variant), S/N 5301 through 5665 inclusive:

Revise the existing AFM to incorporate the information specified in paragraphs (g)(1)(i) and (ii) of this AD of Bombardier Challenger 604 Airplane Flight Manual – Publication No. PSP 604-1, Revision 120, dated December 8, 2020.

(i) Sub-section 2. “Automatic Flight Control System,” of section 02-08, Systems Limitations, of Chapter 2 – LIMITATIONS.

(ii) Sub-sub-section B., “Engine Failure in Climb During (V) ALTS CAP or (V) ALTV CAP,” of sub-section 1. “Single Engine Procedures” of section 05-03, “Single Engine Procedures,” of Chapter 5 – ABNORMAL PROCEDURES.

Note 1 to paragraph (g)(1): For obtaining Bombardier Challenger 604 Airplane Flight Manual – Publication No. PSP 604-1, use Document Identification No. CH 604 AFM.

(2) For Model CL-600-2B16 (604 variant), S/N 5701 through 5988 inclusive:

Revise the existing AFM to incorporate the information specified in paragraphs (g)(2)(i) and (ii) of this AD of Bombardier Challenger 605 Airplane Flight Manual – Publication No. PSP 605-1, Revision 58, dated December 8, 2020.

(i) Sub-section 2. “Automatic Flight Control System,” of section 02-08, Systems Limitations, of Chapter 2 – LIMITATIONS.

(ii) Sub-sub-section B., “Engine Failure in Climb During (V) ALTS CAP or (V) ALTV CAP,” of sub-section 1. “Single Engine Procedures” of section 05-03, “Single Engine Procedures,” of Chapter 5 – ABNORMAL PROCEDURES.

Note 2 to paragraph (g)(2): For obtaining Bombardier Challenger 605 Airplane Flight Manual – Publication No. PSP 605-1, use Document Identification No. CH 605 AFM.

(3) For Model CL-600-2B16 (604 variant), S/N 6050 through 6160 inclusive:

Revise the existing AFM to incorporate the information specified in paragraphs (g)(3)(i)

and (ii) of this AD of Bombardier Challenger 650 Airplane Flight Manual – Publication No. PSP 650-1, Revision 23, dated December 8, 2020.

(i) Sub-section 2. “Automatic Flight Control System,” of section 02-08, Systems Limitations, of Chapter 2 – LIMITATIONS.

(ii) Sub-sub-section B., “Engine Failure in Climb During (V) ALTS CAP or (V) ALTV CAP,” of sub-section 1. “Single Engine Procedures” of section 05-03, “Single Engine Procedures,” of Chapter 5 – ABNORMAL PROCEDURES.

Note 3 to paragraph (g)(3): For obtaining Bombardier Challenger 650 Airplane Flight Manual – Publication No. PSP 650-1, use Document Identification No. CH 650 AFM.

(h) Additional AD Provisions

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, New York ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the New York ACO Branch, mail it to ATTN: Program Manager, Continuing Operational Safety, at the address identified in paragraph (i)(2) of this AD or email to: 9-avs-nyaco-cos@faa.gov. If mailing information, also submit information by email. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(2) *Contacting the Manufacturer*: For any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method approved by the Manager, New York ACO Branch, FAA; or Transport Canada; or

Bombardier, Inc.’s Transport Canada Design Approval Organization (DAO). If approved by the DAO, the approval must include the DAO-authorized signature.

(i) Additional Information

(1) Refer to Transport Canada AD CF-2022-45, dated August 11, 2022, for related information. This Transport Canada AD may be found in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-0010.

(2) For more information about this AD, contact Chirayu Gupta, Aerospace Engineer, Mechanical Systems and Administrative Services Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300; email 9-avs-nyaco-cos@faa.gov.

(j) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) Sub-section 2. “Automatic Flight Control System,” of section 02-08, Systems Limitations, of Chapter 2 – LIMITATIONS of Bombardier Challenger 604 Airplane Flight Manual – Publication No. PSP 604-1, Revision 120, dated December 8, 2020.

Note 4 to paragraph (j)(2)(i): This note applies to paragraphs (j)(2)(i) and (ii) of this AD. For obtaining Bombardier Challenger 604 Airplane Flight Manual – Publication No. PSP 604-1, use Document Identification No. CH 604 AFM.

(ii) Sub-sub-section B., “Engine Failure in Climb During (V) ALTS CAP or (V) ALTV CAP,” of sub-section 1. “Single Engine Procedures” of section 05-03, “Single Engine Procedures,” of Chapter 5 – ABNORMAL PROCEDURES of Bombardier

Challenger 604 Airplane Flight Manual – Publication No. PSP 604-1, Revision 120, dated December 8, 2020.

(iii) Sub-section 2. “Automatic Flight Control System,” of section 02-08, Systems Limitations, of Chapter 2 – LIMITATIONS of Bombardier Challenger 605 Airplane Flight Manual – Publication No. PSP 605-1, Revision 58, dated December 8, 2020.

Note 5 to paragraph (j)(2)(iii): This note applies to paragraphs (j)(2)(iii) and (iv) of this AD. For obtaining Bombardier Challenger 605 Airplane Flight Manual – Publication No. PSP 605-1, use Document Identification No. CH 605 AFM.

(iv) Sub-sub-section B., “Engine Failure in Climb During (V) ALTS CAP or (V) ALTV CAP,” of sub-section 1. “Single Engine Procedures” of section 05-03, “Single Engine Procedures,” of Chapter 5 – ABNORMAL PROCEDURES of Bombardier Challenger 605 Airplane Flight Manual – Publication No. PSP 605-1, Revision 58, dated December 8, 2020.

(v) Sub-section 2. “Automatic Flight Control System,” of section 02-08, Systems Limitations, of Chapter 2 – LIMITATIONS of Bombardier Challenger 650 Airplane Flight Manual – Publication No. PSP 650-1, Revision 23, dated December 8, 2020.

Note 6 to paragraph (j)(2)(v): This note applies to paragraphs (j)(2)(v) and (vi) of this AD. For obtaining this section of the Bombardier Challenger 650 Airplane Flight Manual – Publication No. PSP 650-1, use Document Identification No. CH 650 AFM.

(vi) Sub-sub-section B., “Engine Failure in Climb During (V) ALTS CAP or (V) ALTV CAP,” of sub-section 1. “Single Engine Procedures” of section 05-03, “Single Engine Procedures,” of Chapter 5 – ABNORMAL PROCEDURES of Bombardier Challenger 650 Airplane Flight Manual – Publication No. PSP 650-1, Revision 23, dated December 8, 2020.

(3) For service information identified in this AD, contact Bombardier, Inc., Business Aircraft Customer Response Center, 400 Côte-Vertu Road West, Dorval,

Québec H4S 1Y9, Canada; telephone 514-855-2999; email

ac.yul@aero.bombardier.com; Internet bombardier.com.

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email fr.inspection@nara.gov, or go to: www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on January 5, 2023.

Christina Underwood, Acting Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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